

Date: Thursday, 5/3/2007 11:38:22 AM  
User: Kim Johnston

# Process Sheet

Customer	: CU-DAR001 Dart Helicopters Services	Drawing Name	: NO STEP LABEL
Job Number	: 32198		
Estimate Number	: 10160		
P.O. Number	: <i>N/A</i>	Part Number	: D2137
This Issue	: 5/3/2007	S.O. No.	: <i>N/A</i>
Prsht Rev.	: NC	Drawing Number	: D2137 REV 93.29.06
First Issue	: <i>N/A</i>	Project Number	: N/A
Previous Run	: 31463	Drawing Revision	: 93.29.06
		Material	: <i>N/A</i>
Written By	:	Due Date	: 5/10/2007
Checked & Approved By	:	Qty:	20 Um: Each
Comment	: Est: B 02.02.01 Added step 3 and Inspection level 21 SM		

## Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
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1.0	PG	PURCHASING
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Comment: PURCHASING

Issue P/O *3698*

Make per Dwg 2137

*C 207105/04 (20)*

2.0	D2137P	Decal - No Step
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Comment: Qty.: 1.0000 Each(s)/Unit Total : 20.0000 Each(s)  
DECAL- NO STEP

3.0	PACKAGING 1	PACKAGING RESOURCE #1
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Comment: PACKAGING RESOURCE #1

Receive & Inspect for Transit Damage

Ensure Material Release Note is attached

*207105/08 (22)*

4.0	QC5	INSPECT WORK TO CURRENT STEP
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Comment: INSPECT WORK TO CURRENT STEP

*20705-10 (22)*

5.0	PACKAGING 1	PACKAGING RESOURCE #1
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Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: *5413*

*207105/01 (22)*

**Dart Aerospace Ltd**

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: AD Date: 07/05/14  
 QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

Date: Thursday, 5/3/2007 11:38:22 AM  
User: Kim Johnston

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: NO STEP LABEL

Job Number: 32198

Part Number: D2137

Job Number:



Seq. #:

Machine Or Operation:

Description :

6.0

QC21

FINAL INSPECTION/W/O RELEASE



(22)

Comment: FINAL INSPECTION/W/O RELEASE

1507/05/14

Job Completion



U 07.05.14

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

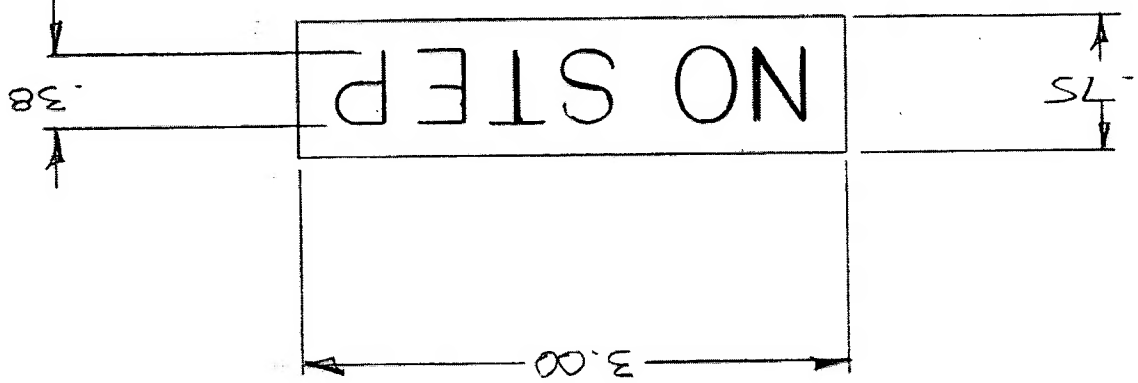
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

CE 12 D



MATERIAL: 3M BOLTESTER  
NATURAL (SILVER &  
WHITE) ON BLACK.  
.003 THICK



NO. 32198  
WORK ORDER  
WITHOUT NOTICE  
SUBJECT TO AMENDMENT  
UNCONTROLLED COPY  
ENGINEERING  
RETURN TO  
SHOP COPY  
3M 7 MIL MASKING FILM #8522CP  
SILVER OR WHITE ON BLACK  
#00-09.05  
#00-09.05

REVISION		DRAWN		APPROVED		DESCRIPTION		CHANGE	
THIS DRAWING IS PRIVATE AND CONFIDENTIAL AND IS LOANED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COMMUNICATED TO ANY OTHER PERSON WITHOUT THE PERMISSION OF DART AERO.									
REQUIREMENTS - UNLESS OTHERWISE SPECIFIED 1. DIMENSIONS ARE IN INCHES 2. SURFACE FINISHES ARE: 3. HOLE TYPES PER MIL - 8 - 2742 4. HOLES PER MIL AND 10000									
1. TOLERANCES - AS SHOWN 2. ANGLES 3. PARALLELISM 4. PERPENDICULARITY 5. SYMMETRY ABOUT ALL M/C CENTER LINES .005									
REPORT ALL DISCREPANCIES - DO NOT SCALE									
BASIC CODE		BASIC CODES		STRESS		CHECKED		CLIENT	
DIA. DASH NO. HEAD NEAR SIDE HEAD FAR SIDE		DIA. DASH NO. LENGTH DASH NO. C-COUNT/INCH		DRAWN DATE 12/29/92		CONTRACT NO.		TITLE DECAL - NO STEP	
PART NO.		ITEM		DESCRIPTION		MATERIAL		SPEC. VENDOR	
DART AERO ACCESSORIES INC. VANCOUVER CANADA									



# Scotchcal™ Opaque Imaging Media 8522

## Description

This media is specially formulated to dry quickly after printing. Production of outdoor weatherable and long-term indoor durable graphics is now easier than ever. Its changeable adhesive allows easy removal for up to one year.

## Advantages

- Optimized for use with selected Epson Stylus Pro printers and Epson Archival inks.
- Optimized for use with selected HP DesignJet Printers and HP DesignJet Ink System UV or HP83UV Color Ink System
- For making opaque, laminated graphics that are outdoor weatherable and long-term indoor durable
- Media:
  - For opaque (reflective) graphics
  - Changeable, easy to remove from warranted substrates up to 1 year later
  - Dries quickly after printing so the overlamine can be applied almost immediately
  - Low slippage paper liner for superior tiling
- Overlaminates:
  - Provide additional UV (ultraviolet) and physical protection for making weatherable finished graphics
  - Available in luster and matte gloss
  - Adhesive allows for heat-assisted or cold-temperature lamination

## Applications and Uses

3M™ Scotchcal™ Changeable Opaque Imaging Media 8522 is intended only for ink jet printing and for use with the listed Compatible Products and Equipment and the following applications. Any other application is NOT warranted by 3M or covered by the worldwide 3M™ MCS™ Warranty unless 3M gives its prior written approval for the application.

- First surface images (the image is on top of the film) for opaque posters and signs, including:
  - Graphics for vans, personal vehicles, trucks and buses
  - Novelty posters
  - Retail and point-of-purchase displays
  - Information graphics such as maps and directories
  - Entertainment promotions in museums, zoos, parks, theatres, sports venues
  - Education and presentation graphics

## Product Bulletin 8522

Release F. Effective January 2003  
Black bar in margin indicates a change

- Legal and courtroom exhibits
- For flat or simple curved surfaces, with or without rivets, used in vertical ( $\pm 10^\circ$ ) applications

## Limitations of End Uses

The following uses and applications are specifically NOT warranted.

- Fleet applications in areas that use salt for winter road maintenance
- Application to non-warranted substrates, including wall-board
- Applications subjected to gasoline vapors or spills
- Application to corrugated or highly irregular surfaces or sharply raised areas
- Graphics applied to stainless steel, including stainless steel vehicles
- On flat surfaces with rivets, tenting of 4 to 10 mm around rivets may be expected; rivets may be cut around to eliminate tenting.

Note: Standard ink jet technology is water based. Water-based chemistry is susceptible to the extremes of heat and humidity. This is a factor in most product constructions on the market. Read the Fabrication, Shelf Life and Storage sections in this bulletin. Staying in the middle of these ranges always provides optimum performance.

## Compatible Products and Equipment

### Thermal Ink Jet Printing Systems

- Epson Stylus Pro 9500, Stylus Pro 10000 printer
  - Epson Archival Inks
- Epson Stylus Pro 10600 printer
  - Epson Archival Inks
- HP DesignJet Printers 2000 and 3000 series
  - HP DesignJet Ink System UV (pigment-based ink)
- HP DesignJet Printers 5000 series
  - HP83UV Color Ink System

### Overlaminates (required)

- 3M™ Luster Overlamine 8519 (semi-gloss)
- 3M™ Matte Overlamine 8520

Note: For the full product names of the 3M products listed on this page, please see page 1.

### Warranted Substrates

Media 8522 is warranted for use on the following rigid substrates.

Some substrates may "out-gas", resulting in tiny bubbles throughout the surface of the graphic. For maximum performance, be sure the substrate you select is properly cleaned and prepared as recommended by the manufacturer. See Instruction Bulletin 5.1 for additional information.

- Alodine (anodized aluminum)
- Automotive panels (automotive painted steel)
- Fruehauf (painted aluminum)
- FRP (fiberglass reinforced plywood)
- Glass
- Imron® (polyurethane-painted metal panel)
- Acrylic
- Sintra™ board

### Test and Approve Non-warranted Substrates Before Use

Media 8522 is not warranted for any substrate other than those listed above. If you want to use it for other substrates, 3M recommends that you test and approve the media for both adhesion and removal characteristics.

### Characteristics

Characteristic	Description
Media	7 mil, white, opaque graphic film
Liner	Low-slippage, lay flat paper
Adhesive	Changeable, pressure sensitive
Thickness (media and adhesive)	7.5 to 8 mil (nominal)
Application substrates	See Warranted Substrates, above
Application surfaces	Flat or simple curved surfaces, with or without rivets, used in vertical ( $\pm 10^\circ$ ) applications (no corrugations)
Application temperature range	28° to 110°F (-2° to 43°C) (air and surface)
Roll sizes	36" x 45 feet (914 mm x 13.5 m) 54" x 45 feet (1372 mm x 13.5 m)

## How to Become a 3M Ink Jet Registered Fabricator

Only 3M Thermal Ink Jet Registered Fabricators are eligible to offer 3M MCS warranted graphics. In order to become certified, a fabricator must complete the requirements as specified in the 3M Ink Jet Graphics Registered Fabricator Reference Manual located on the 3M website at [www.scotchprint.com](http://www.scotchprint.com).

### Effective Performance Life

To obtain the warranty given below, the graphics must be made according to 3M's recommendations which are detailed in the Warranty and Limited Remedies on page 3. Also see the section, Removability.

### Warranted Durability

Media 8522 with Overlaminates 8519 or 8520	Epson Printers		HP Printers	
	Outdoor	Indoor	Outdoor	Indoor
Applied to Warranted Substrates	2 years	5 years	3 years	5 years

### Removability

Imaging media 8522 is removable from warranted substrates for 1 year without the aid of chemical strippers or accessories. Refer to Instruction Bulletin 4.23 for additional information.

### Fabrication

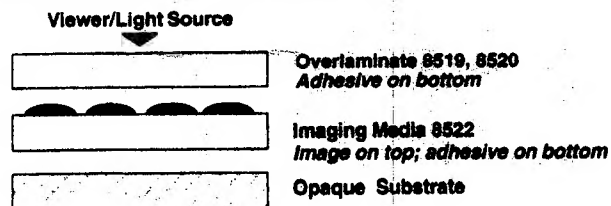
Graphics must be made according to 3M's recommendations which are detailed in the Warranty and Limited Remedies on page 3.

See Instruction Bulletin 4.23 for detailed fabrication, printing and mounting information.

### Graphic Construction Options

#### Opaque (Reflective) Graphics

Opaque graphics made with imaging media 8522 require an overlaminate and an opaque substrate.




Note: For the full product names of the 3M products listed on this page, please see page 1.

## Shelf Life and Storage

- 3M™ Scotchcal™ Changeable Opaque Imaging Media 8522 has a shelf life of one year.
- Storage conditions (new and partially used rolls). For optimum performance, use the middle of these ranges:
  - Original packaging, including plastic wrap
  - Relative humidity of 20% to 80%
  - Temperature of 33° to 104°F (0° to 40°C)
  - Away from direct sunlight
- Do not stack unprotected rolls or lay sharp or heavy objects on them.

## Health and Safety

 <b>Caution</b>
When handling any chemical products, read the manufacturers' container labels and the Material Safety Data Sheets (MSDS) for important health, safety and environmental information.
To obtain MSDS sheets for 3M products: <ul style="list-style-type: none"><li>By fax, call 1-800-364-0768 in the US and Canada or 1-650-556-8417 for all other locations.</li><li>Electronically, visit us at <a href="http://www.3M.com/msds">http://www.3M.com/msds</a>.</li><li>By mail, or in case of an emergency, call 1-800-364-3577 or 1-651-737-6501.</li></ul>
When using any equipment, always follow the manufacturers' instructions for safe operation.

## Warranty and Limited Remedies

### 3M™ MCS™ Warranty for Graphics Produced on HP DesignJet Printers and Epson Stylus Pro Printers

The following is made in lieu of all other express or implied warranties, including any implied warranty of *merchantability* or fitness for a particular purpose: We warrant graphics produced by a 3M Ink Jet Registered Fabricator made with imaging media 8522, printed on an approved HP thermal ink jet printer according to HP's recommendations or Epson Stylus Pro printer according to Epson's recommendations, overlaminated with 8519 or 8520, and applied to a Warranted Substrate according to 3M's recommendations. These



#### Commercial Graphics Division

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St. Paul, MN 55133-3220 USA  
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Technical Info. 1-800-328-3908  
Fax 1-651-736-4233

Fax-on-Demand 1-800-364-0768 US/Canada or 1-651-732-6506 International  
Fax-on-Demand document: 4506  
[www.scotchprint.com](http://www.scotchprint.com)

#### 3M Canada

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#### 3M México, S.A. de C.V.

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Col. Santa Fe, Del. Alvaro Obregón  
México, D.F. 01210  
52-55-52-70-04-00  
Fax 52-55-52-70-22-77

#### 3M Puerto Rico, Inc.

Puerto Rico Industrial Park  
P.O. Box 100  
Carolina, PR 00986-0100  
787-620-3000  
Fax 787-750-3035

graphics are covered against failure caused by ultraviolet light, temperature extremes, pollution, and other elements.

If a graphic fails to perform in accordance with 3M product specifications within this time frame, 3M will replace the materials at no charge. **These remedies are exclusive. In no case shall 3M be liable for any direct, indirect, or consequential damages, including any labor charges.**

## 3M Related Literature

Listed below is related 3M technical literature that may be of interest. You may view and print these Bulletins from our Web site at [www.scotchprint.com](http://www.scotchprint.com), or order them via our Fax-on-Demand (FOD) system. Call one of these phone numbers to order the desired bulletins, and specify the FOD document number provided in the chart.

United States or Canada: 1-800-364-0768  
International: 1-651-732-6506

Subject	Bulletin No.	FOD No.
<b>Product Bulletins</b>		
3M™ Scotchcal™ Overlamine 8519 and 8520	8519/8520	4524
<b>Instruction Bulletins</b>		
Making thermal ink jet graphics	4.23	6523
Application, substrate selection, preparation and substrate-specific application techniques	5.1	7001
<b>Warranties</b>		
Worldwide 3M™ MCS™ Warranty Packet (includes all Commercial Graphics MCS Warranties)		9503
Worldwide 3M™ MCS™ Warranty Overview-Folder		9504

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Sintra is a trademark of Swiss Aluminum Ltd.  
Imron is a registered trademark of DuPont in the United States

## Bulletin Change Summary

The Epson Stylus Pro Printers 9500, 10000 10600, and Epson Archival Inks have been added to this bulletin. Additional changes resulting from this addition are marked with black bars in the margin.